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Compliance & Environmental  
Justice

1118448 - R8 SDMS

TERRANCE GILEO FAYE  
Of Counsel  
tfaye@westol.com

October 1, 2009

Sharon Abendschan  
U.S. EPA Region 8  
Technical Enforcement Program, 8ENF-RC  
1595 Wynkoop Street  
Denver, Colorado 80202-1129

Via Overnight Mail and  
E-mail Transmittal

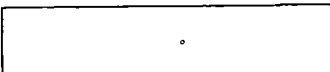
**Re: Request For Information Pursuant to Section 104 of CERCLA  
For the Gilt Edge Mine Site, Lawrence County, South Dakota**

Dear Ms. Abendschan:

On behalf of Blue Tee Corp. and Gold Fields Mining, LLC (hereinafter the Respondent or Respondents, or Blue Tee or Gold Fields respectively) this letter and document production is sent to you to respond to the July 22, 2009 Request for Information Pursuant to Section 104 of CERCLA (hereinafter the Request and the Response). The Request was received by Blue Tee on July 29, 2009 and by Gold Fields on September 1, 2009. Based upon extensions of time granted by Ms. Madigan Esq., the Respondents herein timely respond to the Request.

**General Response:**

By way of general response, the Respondents provide this general information concerning the Gilt Edge Site. This information is provided by Special Counsel to Blue Tee, and Agent to Gold Fields, Terrance Gileo Faye, based upon a review of documents reasonably believed to contain accurate historic information about the Respondents and their predecessor, Azcon Corporation (Azcon). This review was undertaken after obtaining from EPA, a large number of documents concerning site



activities and the 104 (e) responses of other allegedly potentially responsible parties. It is clear from the information reviewed that Blue Tee had no involvement with the Gilt Edge Site, and that the involvement of Gold Fields was extremely limited.

Apparently, in 1976, Azcon Corporation entered into a Joint Venture with Cyprus Mines Corporation to explore the Gilt Edge Site. After a short period of exploration, Azcon discontinued its involvement in the Joint Venture.

Subsequently, in 1982, Gold Fields Mining Corporation signed a Confidentiality Agreement in order to obtain additional information from Cyprus Mine Corporation and to evaluate the possibility of purchasing portions of the Gilt Edge Property. However, apparently no purchase of the property occurred.

### **Corporate History**

By way of a general response, the Respondents provide the following corporate history admitting that they are successors to Azcon Corporation.

Gold Fields American Corporation (Old GFAC) was incorporated in or about 1961 and shortly thereafter acquired stock in the American Zinc Lead and Smelting Company (American Zinc). On May 21, 1963, Consolidated Gold Fields PLC acquired 61% of the outstanding stock in American Zinc. In November 1966, American Zinc merged with a number of its subsidiaries and the surviving corporation changed its name to the American Zinc Company. In or about 1967, Old GFAC merged into Tri-State Zinc, Inc. (DE). Tri-State Zinc, Inc. (DE) then changed its name to Gold Fields American Corporation (GFAC II). In November 1972, the American Zinc Company (ME) changed its name to the Azcon Corporation (ME). By 1976, Consolidated Gold Fields PLC and its subsidiaries owned 85% of the stock of Azcon Corporation and GFAC II created AZ Holding Corporation as a wholly owned subsidiary. In 1997, GFAC II changed its name to Gold Fields Mining Corporation. Gold Fields Mining Corporation was then assigned the interests of certain non-lead/zinc mineral prospects of the then existing Azcon Corporation.

AZ Holding Corporation acquired the stock of Azcon Corporation in 1978. AZ Holding Company and Azcon Corporation then merged in 1983 to ultimately become Gold Fields American Industries, Inc., a wholly owned subsidiary of GFAC II.

In 1985, former management from Gold Fields American Industries, Inc. formed Blue Tee Acquisition Corp. Blue Tee Acquisition Corp. then purchased Gold Fields American Industries. In 1986, Blue Tee Acquisition Corp. was then merged into Gold Fields American Industries, Inc. (ME). After the merger, Gold Fields American Industries Inc. (ME) changed its name to Blue Tee Corp. (ME). The operations of Blue Tee Corp. have always been unrelated to mining activities.

In 1995, Blue Tee Corp., a Maine corporation, merged with and into Blue Tee Corp., a Delaware corporation.

The company most recently known as the Azcon Corporation, a division of Blue Tee, is a Delaware corporation (Azcon Corporation (DE)) that was formed in 1982 by the merger of the Hyman Michaels Company and the Deitch Company, both of which have historically been in the scrap metal business. This entity is unrelated to the activities at Gilt Edge.

### **Historic Documents**

To the best of Blue Tee's knowledge and belief, it has never had care, custody, or control of any documents containing information about the Gilt Edge activities sought by the Information Request. Prior to 1996, archived and historic documents belonging to predecessors of Blue Tee and Gold Fields were housed in Golden, CO. In approximately 1996, these historic documents were moved to Pittsburgh, PA where they were housed over a period of five to six years in approximately three different locations. In 2002, the documents were moved to 1 North Maple Avenue, Greensburg, PA 15601. Since that time, Special Counsel and Agent, respectively, Terrance Gileo Faye, has been the custodian of the historic records.

During the course of the various moves of these documents, numerous boxes of documents have been lost or misplaced. It is possible that among those lost or misplaced boxes may be a limited number of documents concerning the Gilt Edge Site.

In responding to this Information Request, Special Counsel and Agent, Terrance Gileo Faye, searched for and reviewed archived, historic documents for Respondents and the predecessor companies. Copies of relevant documents are included with this response. Documents located are extremely limited in number.

Current operational records of Blue Tee and Gold Fields have not been provided as they are not relevant to the time period or activities under review. Blue Tee and Gold fields object to the production and release of current operational documents as such a production would be unduly burdensome and non-productive.

### **Specific Questions:**

For your convenience in reviewing this Response, the text of each specific information request has been placed above the response. In addition, in this Response, Blue Tee and Gold Fields utilized those definitions of certain words and terms set forth in the Information Request at pages 2-3.

1. Identify the person(s) answering these Questions on behalf of Respondents.

*Terrance Gileo Faye, Special Counsel to Blue Tee Corp. and Agent to Gold Fields.*

2. For each and every Question contained herein, identify all persons consulted in the preparation of the answer.

*Other than Special Counsel and Agent, Terrance Gileo Faye, two other individuals were consulted.*

*David Alldian, Vice President of Blue Tee Corp., was consulted. Mr. Alldian has been an officer with Blue Tee since its formation. Mr. Alldian advised that he had no information concerning the Gilt Edge Site.*

*Colon Kennedy, past Vice President of Gold Fields Mining Corp., advised that he had some recollection that Gold Fields had entered into a Joint Venture for exploration activities at the Gilt Edge Site. He indicated that he was not directly involved in the matter, but recalled that the exploration work was handled by Cyprus Mines and Azcon quickly terminated its involvement in the project.. Mr. Kennedy no longer works for Gold Fields and does not have access to any corporate files, past or current.*

3. For each and every Question contained herein, identify documents consulted, examined, or referred to in the preparation of the answer or that contain information responsive to the Question and provide accurate copies of all such documents.

*See the General Response. Copies of responsive documents are attached.*

4. Describe Respondent's activities at the Site or the activities of any partner of Respondent including the following:
- a. The dates of operation;
  - b. The physical changes made to the Site;
  - c. The mining and mineral processing activity conducted at the Site, including but not limited to exploration activities;
  - d. Other entities the Respondent partnered with to perform Site operations.
  - e. The activities taken upon cessation of operations at the Site related to reclamation and restoration.

*Copies of responsive documents, if any, are attached.*

5. Describe and where available, provide maps and construction drawings that depict the physical characteristics of the Site and all changes that Respondent or its partners made at the Site, including but not limited to the following:

- a. Surface structures (e.g., buildings, tanks, etc.);
- b. Exploration drill holes, ground water wells, including drilling logs;
- c. Ore repositories, heap leach pads, and mine waste impoundments;
- d. Shafts, adits, and tunnels or other excavations;
- e. Roads.

*All responsive documents, if any, are attached.*

6. Describe all waste materials that resulted from Respondent's or its partners' operations at the Site including, but not limited to, waste rock, tailings, spent ore, and treatment plant sludges. State the quantities produced of each such waste. Describe where each such waste was disposed of. Identify any hazardous substances contained in such wastes and provide copies of any and all documents that describe any analysis of such wastes and the results of the analysis.

*All responsive documents, if any, are provided.*

7. Provide copies of any and all permits issued by State or Federal agencies related to Respondent's operations at the Site, including permits Respondent obtained on behalf of any other entities or permits obtained by others on Respondent's behalf.

*No permits were located.*

8. Describe any mining activity at the Site that involved excavation, grading, filling, drilling or other earth moving, describe those activities including the date of the activity and the area of the Site on which it occurred. Identify the individuals responsible for such activities at the Site. Provide all documentation pertaining to such activity.

*All responsive documents, if any, are provided.*

9. Provide all documentation pertaining to drill holes, including borehole logs, geological logs, location maps, and any information relating to the results and analysis of the drilling that was done at the Site by Respondent and/or its contractors.

*All responsive documents, if any, are provided.*

10. Provide all existing technical or analytical information in your possession about the Site, including, but not limited to, data and documents related to soil, water (ground or surface), geology, geohydrology or air quality on and about the Site.

*All responsive documents, if any, are attached.*

11. Provide copies of project authorization proposals and/or status and planning reports for Respondent's operations at the Site. Identify the person(s) who prepared these reports and his/her role(s) at the Site.

*All responsive documents, if any, are attached.*

12. Describe the corporate history and successorship of Azcon Corporation (and its predecessors such as American Zinc, Lead & Smelting Company and American Zinc Company, and its successors such as Gold Fields American Industries), Consolidated Gold Fields of South Africa (and its successors such as Consolidated Gold Fields), and BlueTee Corporation. Provide documents and agreements to support your description. Include the following information in your description:

- a. Corporate nature and origin of the relationship (i.e., asset purchase, corporate merger, name change).
- b. Dates, countries, and states/provinces of incorporation;
- c. Names of other entities that held ownership interest in the entities above, and an explanation of these ownership interests, including percentages
- d. Date of the change of ownership and names of the companies or persons with whom the transactions were negotiated.
- e. For all changes in ownership, please provide all documents pertaining to the transaction such as asset purchase agreements, contracts of sale, merger document, and any documents relating to the allocation of responsibility for environmental liabilities.
- f. Corporate organizational charts, schedules, and/or other documentation that reflects Azcon Corporation (or its predecessors such as American Zinc, Lead & Smelting Company, American Zinc Company, or its successors such as Gold Fields American Industries)

- g. The directors and executive officers, including managers, of each corporate entity during the time of Respondent's operations at the Site; describe each individual's respective role(s) at the Site.

*See Corporate History and Historic Documents Section above.*

- 13. Regarding the 1986 acquisition by Blue Tee Acquisition Corporation of Gold Fields American Industries, please provide:

- a. All documents related to the due diligence examination performed by or on behalf of Blue Tee Acquisition Corporation or Blue Tee Corporation.
- b. All discussions from minutes of the Board of Directors, Executive Committee, Finance Committee, Management Committee and all other committees or management meetings of Blue Tee Acquisition Corporation and/or Blue Tee Corporation regarding potential environmental liabilities of Gold Fields Am Industries.
- c. All valuations of assets associated with the 1986 acquisition.
- d. Any documents regarding the assumption of the liabilities either express or implied, of Gold Fields American Industries.

*See Corporate History and Historic Documents Section above.*

- 14. Documents relating to the merger between Blue Tee Acquisition Corporation and Gold Fields American Industries including

- a. Merger agreement between Blue Tee Acquisition Corporation and Gold Fields American Industries.
- b. Board of Directors resolutions and/or evidence of other actions relating to the merger.
- c. All documents filed with United States (including Secretaries of State) and Canadian governments.

*See Corporate History and Historic Documents Section above.*

- 15. Documents relating to the name change from Gold Fields American Industries o Blue Tee Corporation (inc. ME) including

- a. Board of Directors resolutions and/or evidence of other actions relating to the name change

- b. All documents filed with United States (including Secretaries of State) and Canadian governments.

*See Corporate History and Historic Documents Section above.*

- 16. Merger between Blue Tee Corporation (incorporated in Maine) and Blue Tee Corporation (incorporated in Delaware)
  - a. Merger agreement between Blue Tee Acquisition Corporation and Gold Fields American Industries.
  - b. Board of Directors resolutions and/or evidence of other actions relating to the merger.
  - c. All documents filed with United States (including Secretaries of State) and Canadian governments.

*See Corporate History and Historic Documents Section above.*

- 17. For each year from 1986 to the present, please provide the following organizational information:
  - a. Corporate organizational charts, schedules, and/or other documentation provided to, and/or used by, the tax preparer(s) for federal income tax returns (e.g., internal tax department of the company, outside accounting firm) that reflect Blue Tee Corporation's corporate structure (e.g., all direct and indirect subsidiaries, all direct and indirect parent companies, affiliates, percentage ownership by the respective owner(s)).
  - b. Any other organization charts, schedules and/or other documents for Blue Tee Corporation in any year from 1986 through the present that was not provided in response to Question 17a.

*Respondents object to this request as being irrelevant, and overly burdensome.*

- 18. Identify companies or individuals that the Respondent hired to perform work at the Site. Provide all documentation, including contracts, pertaining to this work. Include information about the purpose of and documentation related to Respondent's contracts at the Site.

*All responsive documents, if any, are attached.*

- 19. Identify whether Respondent obtained insurance for environmental liability at the Site. If so, provide all information related to such contract(s), including copies of the insurance document(s).



*Respondent, Blue Tee Corp. objects to this Information Request to the extent that it seeks information that is subject to and protected by any applicable privilege. At one time, Respondent, Blue Tee Corp. had insurance for environmental liabilities. Coverage under the policies was assigned to Gold Fields. Copies of the policies have not been provided at this time, as the issue is moot. While Blue Tee/Gold Fields may have had some alleged environmental insurance coverage for sites, including Gilt Edge, that coverage has almost certainly been exhausted and any liability thereunder settled pursuant to a series of confidential settlements entered into between the Respondents and the insurance companies in the late 1990s. Any limited insurance coverage which may still be in existence is the subject of continued litigation in New York City and coverage is being vigorously contested.*

20. If you have reason to believe that there may be persons able to provide a more detailed or complete response to any Question contained herein or who may be able to provide additional responsive documents, identify such persons and the additional information or documents that they may have.

*The Respondents are attempting to locate former employees who may be knowledgeable about Gilt Edge activities, but to date, this attempt has been unsuccessful.*

21. For each and every question contained herein, if information or documents responsive to this Information Request are not in your possession, custody or control, then identify the persons from whom such information or documents may be obtained.

*See Corporate History and Historic Documents Section above.*

## **Conclusion**

Respondents appreciate the information provided by EPA. The information was helpful and allowed the Respondents to focus its own historic document search. However, despite a comprehensive document review, very little information about this site has been located, nor have any former employees been located who were directly involved in this project. If additional information or documents responsive to this Request become known or available to Respondents after this submission, Respondents will supplement this Response within thirty (30) days of discovering such responsive information. If after submitting this Response, Respondents discover or believe that any portion of this submission is false or misrepresents the truth, Respondents will notify you of this fact as soon as possible and provide you with a corrected Response.

If you have any questions concerning this Response, please do not hesitate to contact me at the address and/or phone number listed above or at the above-referenced e-mail address.

Sincerely,

A handwritten signature in black ink that reads "Terrance Gileo Faye". The signature is written in a cursive, flowing style with a large initial 'T'.

Terrance Gileo Faye  
Special Counsel to Blue Tee Corp.  
Agent for Gold Fields Mining, LLC

TGF/ega

Enclosures

## ENCLOSURE 2

### NOTARIZED CERTIFICATE

I, Terrance Gileo Faye, having been duly sworn and being of legal age, hereby state:

1. I am the person authorized by Blue Tee Corp. and Gold Fields Mining, LLC to respond to the Environmental Protection Agency's (EPA's) request for information concerning the Gilt Edge Mine Site located in Lawrence County, South Dakota.
2. I have made a complete and thorough review of all documents, information, and sources relevant to the request.
3. I hereby certify that the attached response to EPA's request is complete and contains all information and documents responsive to the request.



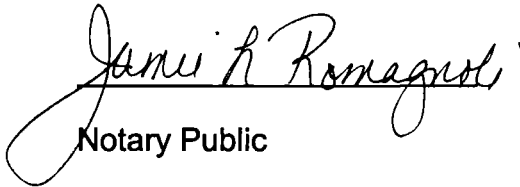
(Signature) (Name, Title)

Special Counsel to Blue Tee Corp.  
Agent to Gold Fields Mining, LLC

(SEAL)

Subscribed and sworn to me

this 1<sup>st</sup> day of October, 2009.

  
Notary Public

My Commission Expires 9-3-2011

My address is 371 Maple Ave

Greensburg Pa 15601

COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Jamie L. Romagnoli, Notary Public  
City Of Greensburg, Westmoreland County  
My Commission Expires Sept. 3, 2011  
Pennsylvania Association of Notaries



Printed on Recycled  
Paper

1945 GILT EDGE. CYPRUS.

GILT EDGE PROPERTY, LAWRENCE COUNTY, SOUTH DAKOTA

PARTICIPATION:

Azcon	24%
Cyprus	56%
Congdon & Carey	20%

GENERAL:

The results of all work to date are summarized in a report entitled "Ore Reserve Study and Preliminary Evaluation" by Bruce B. Goddard. The 1976 program included drilling 39 rotary holes totalling 10,075 feet and 7 diamond drill holes totalling 2,485 feet. A mineable ore reserve of 8.64 million tons at an average grade of 0.048 oz/T Au is estimated. This could be mined from two adjacent pits with an overall stripping ratio of 1:29 to 1 using a 55° pit slope.

GEOLOGY:

The gold mineralization occurs in two sub-parallel zones of north-east trend associated with a small stock of latite porphyry. Gold is intimately associated with a pyrite-arsenopyrite sulphide assemblage that occurs as disseminations and fracture fillings in the host porphyry.

ORE RESERVES:

A "mineable" ore reserve of 8.64 million tons at 0.048 oz/T Au has been calculated using an 0.02 oz/T cut-off. A breakdown of this figure is given below:

<u>Zone</u>	<u>Tons</u>	<u>Grade</u>
Dakota Maid	4,871,745	0.049
+ 10% dilution	487,175	0.010
Sub-total	5,358,920	0.045
Sunday	2,986,406	0.057
+ 10% dilution	298,641	0.010
Sub-total	3,285,047	0.053
Total Reserve	8,643,967	0.048

Goddard acknowledges that time restrictions posed a major limitation on the ore reserve estimate. Notwithstanding the following criticisms are pertinent:

1. Positive, Probable and Potential categories are defined and presumably calculated but no breakdown is given. Potential ore is apparently included in the "mining ore reserve" which is not conventional.

2. The inclined drill holes have been projected onto the section closest to the collar despite the fact that most holes are so oriented to cross several sections. This could have been easily and quickly rectified by simple geometrical construction to be consistent with projections used for the vertical holes.

3. No attempt has been made to establish geological boundaries to ore on the cross sections, which would have provided more realistic "blocks" than those used.

Despite the above criticisms, a check calculation using the longitudinal sections on the Sunday Zone gave a very comparable figure to Goddard's estimate.

#### POTENTIAL FOR FURTHER ORE:

Both zones are open to the northeast with a good chance that further drilling will locate additional ore at a similar grade. Within, and adjacent to the ore zones, there are several locations where further drill holes would probably identify additional ore.

#### METALLURGY:

Only three small scale metallurgical tests have been carried out. The results indicate that the ore is probably not amenable to simple heap leaching and that separate circuits would be necessary to treat oxidized and sulphide ores.

#### ENGINEERING:

The ore reserve calculation was concluded by defining trial pits to mine the ore. Two pits were constructed using a 55° pit wall. A 0.96 to 1 strip ratio was determined for the Dakota Maid Pit and 1.82 to 1 stripping ratio for the Sunday Pit.

#### COMMENTS AND RECOMMENDATIONS:

1. The grade is low and particularly when the metallurgical problems are considered, 0.048 oz/T Au is almost certainly sub-economic.
2. Cut-offs of 0.03, 0.04 and 0.05 oz/T Au should be used to determine sensitivity of the grade tonnage relationship. A preliminary inspection of the data suggests that increasing the cut-off will result in a very substantial reduction in tonnage.
3. Having expended a great deal of money in obtaining the drill holes, it is false economy to "rush" the ore reserve estimation. A more sophisticated estimation is merited. These preliminary estimates should be recalculated to provide an estimate that takes better account of geological continuity and also is made for a range of cut-off grades. It would also be useful to classify oxide and sulphide ore separately.

4. Further metallurgical work is required to determine the extent of the metallurgical problems indicated by tests carried out to date.

5. The cost of "staying with" the project is currently being calculated. It is recommended that this is reviewed together with a preliminary economic study, using reasonably "optimistic" projections.

*Mark Springett.*

*Jan. 13, 1977*

*MSA*



Gilt Edge.

(24%)

Total Commitment

Cal	1977	50,000
Cal	1978	50,000
Cal	1979	50,000
Cal	1980	50,000
Cal	1981	10,000

Advance Share

12,000
12,000
12,000
12,000
2,400

Advance Royalty

Cal.	1977	6,500
	1978	8,500
	1979	10,000
	1980	10,500
	1981	12,500
	1982	14,500

1,560
2,040
2,400
2,520
3,000
3,480

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1983	16,500
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3,960
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1984	18,500
------	--------

4,440
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1985-1989	95,000
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22,800
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Total

1977
------

13,560
--------

1978
------

14,040
--------

1979
------

14,400
--------

1980
------

14,520
--------

1981
------

5,400
-------

1982
------

3,480
-------

1. Telephonic conversation with Mr Cliff Mark indicates a budget of approx \$200,000 submitted for 1977. This is to include further drilling and metallurgical work. Minimum holding costs on this property are \$ summarised and are ~~very~~ low, consisting only of land payments.
2. Bruce Goddard has made calculations of reserves using cut offs of 0.03, 0.04 and 0.05 oz/T in addition to the 0.02 oz/T cut off figure given in the preliminary feasibility study.

cut-off	Tonnage	Grade
0.02	8,600,000	0.048 oz/T
0.03	5,800,000	0.060 ..
0.04	3,967,000	0.072 ..
0.05	2,512,000	0.088 ..

3. Possibilities for developing further 'ore' exist but the low grade & the metallurgical problems are discouraging. In order to provide an attractive target a substantial tonnage of relatively 'high grade' ore is required which ~~could~~ <sup>might</sup> be worked with the lower grade ore outlined above. At the present stage of exploration this might be discovered by intelligent 'wild cat drilling' but this exercise would be a long shot.

West of Chipmunk <sup>environmental sensitive</sup>  
Pete Chapman.

NE — possible  
 to SW of main body. that hole drilling

1) S 4  
 18-128' .135 m/7 Not there.

X la

S all unsuccessful.

8) ~~up~~ up. dip. / down dips  
100' between section

G.I.T

Flank → Roosting.

.02	8.6	@ .048
.03	5.8	@ .060
.04	3.967	@ .072
.05	2.512	@ .088

Cut-off

Nut			
.02	10.63	@	.057
.03	7.84	@	.063
.04	6.24	@	.071
.05	4.914	@	.081

\$130 would go

Monday.

Caroline.



Wood Tue. Nite 11:00

all day Wednesday.

Thursday to Colo Springs // Gold Hills

WFL // ? to Houston with Go-Home ~~TH~~

Maybe Friday 14.

F. GILT EDGE PROJECT, LAWRENCE COUNTY, SOUTH DAKOTA

1. <u>Participation:</u>	Azcon	24%
	Cyprus	56%
	Congdon and Carey	20%

2. General.:

Results of the 1976 exploration program at Gilt Edge are summarized in a report entitled "Ore Reserve Study and Preliminary Evaluation" by Bruce B. Goddard dated November, 1976. The report <sup>Estimates</sup> gives a "mining ore reserve" of 8,650,000 tons at 0.048 oz/T gold accessible from two pits with an overall stripping ratio 1:31 to 1. Metallurgical tests show that there is a cyanide problem with the ore and suggest that the ore is not amenable to heap leaching. Both zones of mineralization (The Dakota Maid and Sunday) show potential for development of further ore at similar grade.

Currently the report is being evaluated by Azcon personnel and a summary report and recommendations will be forthcoming.

GILT EDGE PROPERTY, LAWRENCE COUNTY, SOUTH DAKOTA

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4. Further metallurgical work is required to determine the extent of the metallurgical problems indicated by tests carried out to date.

5. The cost of "staying with" the project is currently being calculated. It is recommended that this is reviewed together with a preliminary economic study, using reasonably "optimistic" projections.



# Gilt Edge

Ton. 8.64  $\times 10^6$   
 Grade 0.0480/T  
 Recovery 70%  
 Gold Price \$120  
 Capital Cost \$2  $\times 10^6$  \$12  $\times 10^6$   
 Operating Cost \$2.50/T \$3/T \$4/T  
 Mining Rate 1  $\times 10^6$  TPY

	1	2	3	4	5	6	7	8
Capital	2							
Op	3	3	3	3	3	3	3	3
Revenue	4.032	4.032						
	1.032	1.032	1.032	1.032	1.032	1.032	1.032	1.032
	7.062	6.062	5.434	4.729	4.088	3.575	2.976	<u>2.494</u>

8								
2								
5.040								
2.040								
6.145	4.460	2.927	1.533	.2668	.8847	1.932	<u>2.883</u>	

12								
2.040								
10.15	8.460	6.927	5.533	4.267	3.115	2.052	<u>1.117</u>	

Section	A	Final	Start	SUNDAY PIT.		From Long Sections		
				sq. mi.	T		Am. a/t.	
110	A	27.75	15.42	12.33	30,825	256,875	C	.035
	$\Sigma$					256,875	C	.0350
111	A	25.10	24.35	.75		15,625	C	.034
	B	26.55	25.10	1.45		30,208	C	.061
	C	33.26	32.06	1.20		25,200		.037
	D	28.83	25.44	3.39		70,625	C	.028
	E	35.74	28.83	6.91		143,758	C	.052
	F	56.78	49.20	6.98		145,417	C	.046
	G	60.71	56.78	3.93		81,875	C	.055
	H	72.08	57.56	4.52		94,167	C	.056
	$\Sigma$					606,875	C	.0482
112	A	90.07	89.07	1.00		20,223		.021
	B	90.44	90.07	.37		7,708		.023
	C	93.59	90.90	2.69		56,042		.080
	D	97.68	93.59	4.09		85,708		.026
	E	92.82	77.15	5.67		112,125		.020
	F	91.98	82.82	9.16		190,833		.043
	G	106.68	103.90	6.78		141,250		.074
	H	103.90	93.82	10.08		210,000		.074
	I	18.37	11.66	6.71		139,722		.046
	J	21.35	18.37	2.98		62,023		.026
	K	30.20	28.23	1.97		41,042		.026
	L	30.00	27.64	2.36		49,167		.038
	$\Sigma$					1,122,083		.0431
113	A	28.79	26.79	2.00		41,657		.030
	B	36.26	32.32	3.94		82,082		.028
	C	45.87	36.26	9.61		200,208		.020
	D	47.00	45.00	2.00		41,667		.027
	E	49.92	47.00	2.92		60,333		.032
	F	56.99	54.32	2.67		55,125		.029
	G	51.42	50.28	2.14		44,583		.026
	H	67.65	65.74	0.91		18,958		.038
	I	60.10	56.99	3.11		64,792		.023

Cont.

113 (cont)	J	72.10 67.65	4.45	92,702	.025
	K	80.69 76.50	4.19	87,292	.133
	L	76.50 72.10	4.40	91,667	.042
	M	95.72 92.37	4.35	90,625	.030
	$\Sigma$			<u>972,708</u>	<u>.0878</u>

114	A				.025
	B	21.80 12.79	10.01	208,542	.025
	C	30.90 22.80	8.10	168,750	.033
	D	33.62 30.90	2.78	51,917	.040
	E	37.00 33.86	3.14	65,417	.133
	F	38.70 37.00	1.70	35,417	.033
	G	47.14 45.60	1.54	32,083	.042
	$\Sigma$			<u>548,126</u>	<u>.0431</u>

3,526,667 T @ .0557 a/T Av.

(2.49 a from section 112.)

- 146 67 T @ .030

3,380,000 : : .057 a/T

which checks with the Super. (see  
\$)

3,235,047 @ .053 a/T

amount to the old off grade.

Super. by 1/10/1973

2469. mining

1872. off

\$3541

1437

3978

v. 2.09 p. 197

North America

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

Tons  
 Mineable Reserve Grade  
 Strip Ratio  
 Gold Price  
 Recovery  
 Capital Cost  
 Operating Costs  
 Mining Costs  
 Discount 10%

$10.53 \times 10^6$  kg  $10.00 \times 10^6$   
 $.0572/T$   
 $2.17 : 1$   
 $\$120$ ,  $\$150$   
 $70\%$ ,  $80\%$   
 $12$   $14$   $2M$   
 $13.00/T$ ,  $14.00/T$   
 $1 \times 10^4 T/y$ ,  $10500 T/y$

Capital  
 Cost  
 Revenue

	1	2	3	4	5	6	7	8	9	10
77	78	79	80	81	82	83	84	85	86	87
8										
300	300	300	300	300	300	300	300	300	300	300
4788	4788	4788	4788	4788	4788	4788	4788	4788	4788	4788
2	1788	1788	1788	1788	1788	1788	1788	1788	1788	1788

6375 4897 3534 2332 1722 2122 7047 1559 2297 2086

5

400 400 400 400 400 400 400 400 400 400  
 4788  
 288 288 288 288 288 288 288 288 288 288  
 2332 6532 6040 503 4502 4764 3796 3452 3152

12

3  
 147  
 1788  
 1037 2297 7554 6332 5222 4213 3295 2451 1703 1014

1200  
 1200  
 400  
 5985  
 7985  
 1000

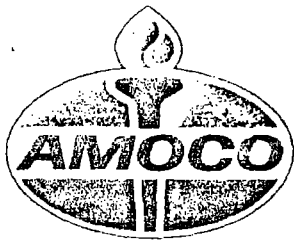
1200 400  
 5985  
 7985  
 1000 8355 7000 6000 4575 3255 2375 1410

With both Gilt Edge and Northumberland we have deposits that are somewhat comparable to the Ortiz in both tonnage and grade. The upper limits that might be set on tonnage ~~is~~<sup>are</sup> greater in both cases than ~~for~~ the Ortiz but both deposits exhibit rather less favorable stripping ratios and poorer continuity of the ore which is likely to lead to greater losses and dilution than might be expected at the Ortiz. Gilt Edge is likely to experience metallurgical difficulties in the treatment of ore leading to the need for considerably greater capital expenditure and milling costs than would be required for heap leaching. In addition Gilt Edge has a very low average grade (0.048 oz/T) at the 0.02 cut-off and tonnage ~~and~~ is likely to be very sensitive to cut-off grade.

Northumberland is less likely to show unfavorable metallurgical characteristics and the average grade at the 0.02 cut off is higher than Gilt Edge (0.054 oz/T). Tonnage is probably slightly less than Gilt Edge (Azcon estimate) but the property shows greater potential for development of additional ore and less tonnage sensitivity to changes in cut-off grade.

NORTHUMBERLAND/GILT  
EDGE

---



*Northumberland  
Gilt Edge  
Mining Properties*

# Cyprus Northumberland Mining Co. Gilt Edge Mining Properties

Amoco Minerals Company  
September 1982



**Amoco Minerals Company**

7000 South Yosemite Street  
Post Office Box 3299  
Englewood, Colorado 80155  
303-740-5052

Ralph E. Anderson  
Vice President Administration

September 21, 1982

Mr. Major W. Seery  
Administrative Director of  
North American Exploration  
Gold Fields Mining Corporation  
200 Union Boulevard - Suite 500  
Lakewood, CO 80228

Dear Mr. Seery:

We have received your signed Confidentiality Agreement regarding Gold Fields Mining Corporation's interest in our Northumberland Mine and Gilt Edge properties. In accordance with my previous letter, I have attached a brochure describing these properties in more detail. If after reviewing the brochure you have a continued interest in these properties, please contact me to arrange for an appointment to examine documents in our data room.

Very truly yours,

vln  
attachment

RECEIVED

SEP 23 1982

G F M C  
EXCISE



CYPRUS NORTHUMBERLAND MINING COMPANY

MEMORANDUM

---

CONFIDENTIAL

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This Memorandum has been prepared by Cyprus Mines Corporation (Cyprus), the parent corporation of Cyprus Northumberland Mining Company (Cyprus Northumberland). It is being delivered to a limited number of parties who it is believed may be interested in acquiring Cyprus Northumberland. The sole purpose of this Memorandum is to assist the recipient in deciding whether it wishes to proceed with an in-depth investigation of Cyprus Northumberland. While the information herein is believed to be accurate, Cyprus expressly disclaims any and all liability for representations or warranties, express or implied, contained in, or for omissions from, this Memorandum or any other written or oral communication transmitted or made available to a prospective purchaser.

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Cyprus Mines Corporation

September, 1982

Northumberland Mine  
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## EXECUTIVE SUMMARY

The Northumberland mine is located at an elevation of approximately 8,500 feet near Northumberland Pass, a summit between Big Smoky Valley and Monitor Valley in northern Nye County, Nevada. Northumberland is an open-pit, heap leach operation employing 110 people. Development of the operation was completed in early 1982, and the mine is now operating at an 850,000 ton per year rate. Annual production is estimated to average 30,000 ounces each of gold and silver.

The gold mineralization at Northumberland is of two distinct types. The first, the "Main Ore", is found in a single sedimentary horizon that has been altered to a jasperoid. This jasperoid varies in thickness from 20 to 100 feet, but averages approximately 45 feet. The second type of mineralization is a shaly limestone hydrothermally altered into siltstones. This soft, friable rock is the so called "Chipmunk Ore."

\* As of January 1, 1982, Northumberland had 10.4 million tons of proven ore reserves averaging 0.052 ounces of gold per ton and 5.8 million tons of lower grade ore whose value is a function of operating costs and market prices. The 1982 drilling program is expected to produce a modest increase in reserves. Additional drilling could result in substantial increases in reserves.

Northumberland's gold and silver dore production is currently refined at Handy & Harman's El Monte, California refinery under a contract which expires November 10, 1982. Cyprus Northumberland plans to solicit refining bids from major refineries in October, 1982, to determine the most competitive terms and services for a new contract.

There are about 4,500 acres of unpatented lode mining, placer, and millsite claims at Northumberland; patenting of both lode claims and millsites is in progress. Environmental permitting is complete. As of July 31, 1982, there was a total of \$22.5 million of invested capital at Northumberland.

\* Level grade tonnage  
distribution - for  
reported - 8-9 MM tons @ 0.08

## INTRODUCTION

Cyprus Northumberland Mining Company (Northumberland), a Delaware Corporation, is a wholly-owned subsidiary of Cyprus Mines Corporation.

### Description

The Northumberland mine is located at an elevation of approximately 8,500 feet near Northumberland Pass, a summit between Big Smoky Valley and Monitor Valley in northern Nye County, Nevada. The mine is approximately 80 miles north of Tonopah and is almost in the geographical center of Nevada (see map opposite). Although the mine is situated at the Pass, ore processing facilities are 8-1/2 miles west and 2500 feet lower at the edge of Big Smoky Valley.

Northumberland is an open-pit, heap leach operation employing 110 people. Development of the operation was completed in early 1982, and the mine is now operating at an 850,000 ton per year rate. Annual production is estimated to average 30,000 ounces each of gold and silver.

### General History

Mining activity first commenced in the Northumberland district in the late 1800's after quartz silver veins in the granitic stock were discovered. In the late 1930's, gold was discovered in the silicified jasperoid outcrops and a 300 ton per day mill was erected on the property by the then newly organized Northumberland Mining Company. Between 1939 and 1942, approximately 240,000 tons of ore were milled producing 45,000 ounces of gold.

Between 1959 and 1973, several major companies explored the property to determine the size and grade of remaining reserves. These companies include Kerr McGee, Homestake and Idaho Mining.

In 1971, the property was acquired by Idaho Mining Company. The acquisition included the old Northumberland Mining Company along with options to acquire 76 claims held by individual owners. Idaho Mining's drilling during 1971 and 1972 established the existence of several million tons of low-grade gold reserves. In the fall of 1974, Cyprus Mines entered into a joint venture agreement to be the operator of the property, and in 1979, Cyprus bought the remaining interest of Idaho Mining.

After drilling programs in 1975 and 1976 provided further encouragement, the 1977 effort was directed towards metallurgical testing. Pads, ponds, and a portable crusher were installed at the mine site area. Bulk samples from both the "Main Ore" and the "Chipmunk Ore" were selected. The actual testing occurred in the summer of 1978 on two test heaps of 1500 and 2000 tons each. These tests proved the satisfactory leachability of the ores.

### Development

Early in 1980, a feasibility study was completed. A major contractor was hired to provide most of the plant engineering and construction. All necessary permits were obtained. By September, 1980, construction had begun on the plant buildings, the haul roads, and the site for the crushing plant. Most major construction activities were completed by the first quarter of 1981. Start-up of the mine facilities occurred during the first quarter of 1981. The process plant was also completed during this period and testing with water circulation was started on a limited basis. In May, 1981, leaching started on the first 20,000 tons of "Main Ore." Full production was not achieved until early to mid-1982.

## GEOLOGY

The geology and mineralization of Northumberland are described more fully in Attachment 1 and summarized below.

The gold-bearing sedimentary rocks at Northumberland are similar to those in the Carlin Gold Deposit located in north central Nevada. The host rocks are silty limestone and dolomites of Ordovician age which have been altered by hydrothermal ore bearing solutions. Numerous high-angle faults, probably related to doming caused by a nearby Jurassic granitic intrusive stock, have served as channelways for the mineralizing solutions and tend to break the orebodies into discrete blocks.

The gold mineralization discovered to date at Northumberland can be separated into two distinct types. The first, the "Main Ore", is found in a single sedimentary horizon. The original rock type was a cherty limestone which has been fractured and hydrothermally altered to a jasperoid by the addition of silica. The jasperoid varies in thickness from 20 to 100 feet, but averages approximately 45 feet. The second type of mineralization is contained in multiple horizons in a shaly limestone which has been hydrothermally altered (in most cases involving the removal of calcium carbonate) to form siltstones. This soft, friable rock is the "Chipmunk Ore." The "Chipmunk Ore" also contains a small percentage of highly silicified or jasperoid rocks and has a higher silver content than the "Main Ore." The "Chipmunk Ore" is to the west and in contact with the "Main Ore." About 40 per cent of the mineable ore tonnage is in the "Main Ore" which contains 50 per cent of the gold due to a slightly higher grade.

Near surface carbonaceous material has been observed in some drill cores but not in either of the two ore zones. Leach tests on cores have not indicated recovery problems.

Main Ore is - Higher grade  
Chipmunk ore - in low grade

### MINEABLE RESERVES

January 1, 1982, mineable reserves with a 0.02 ounce per ton cut-off, are tabulated as follows:

	<u>Tons Ore</u> <u>000's</u>	<u>Grade*</u> <u>Ounce Au/Ton</u>	<u>Stripping</u> <u>Ratio</u>
Proven	10,411	0.052	1.75
Possible	<u>5,849</u>	0.034	6.87
Total	16,260	0.045	3.59

\*Fire Assay

Although the 1982 drilling program has not been completed, likely improvements in tonnage have been noted:

1. The jasperoid zone extends to the north in the main pit area.
2. A second jasperoid zone appears in the main pit area.
3. Many drill holes into the Chipmunk area end in ore grade mineralization. This year's core drilling indicates some mineralization extends to 500 feet below the surface.

The 1982 drilling program is expected to increase proven reserves a modest amount. With additional drilling there is potential to substantially increase the reserves.

## MINING AND PROCESSING

A simplified material flow diagram is attached and a more detailed process description follows.

All material is drilled and blasted. The ore and waste is hauled in 50 ton Wabco trucks which are loaded with 245 Caterpillar front shovels and 992 Caterpillar front-end loaders. The waste is hauled to one of several near-by dumps while the ore is hauled about 1/2 mile to the crusher stockpile.

A three stage crushing circuit is used to reduce the 3,000-4,000 tons per day of ore to nominally minus 1/2 inch. An intermediate stockpile of minus 3 inch material separates the second and third stage crushers. This stockpile is used as surge capacity when crushing "Main Ore" in three stages and is the final product pile when crushing "Chipmunk Ore" in two stages. The three stage crushing capacity is approximately a 200 ton per hour average rate over a ten hour shift.

Crushed ore is hauled approximately 8-1/2 miles to heap leach pads. A combination of company-owned 60 ton capacity Peterbuilt end-dump trucks and smaller bottom dump contractor trucks is used for this haul. Ore is dumped on heaps which are approximately 150 feet wide, 1150 feet long and 20 feet high. Each heap is underlain with a 30 mil polyvinyl chloride liner on a prepared base.

Cyanide leach solution at pH 10.5 is applied with sprinklers at a design flow rate of approximately 500 gallons per minute. The rate varies according to the percolation characteristics of each heap or sections within a heap. Pregnant solution is pumped from the collection ponds near the heaps to the carbon adsorption circuit.

Six stages of carbon columns are used to recover gold and silver at a design flow rate of 500 gallons per minute. Carbon loading is normally 200-250 ounces of metal per ton of carbon and one ton is advanced per day. Three batch stripping columns have been installed and are operated in parallel. Stripping requires approximately 12 to 14 hours at a strip solution flow rate of 17 gallons per minute. The strip tanks are operated at 140 degrees centigrade with a strip solution of 1.0 per cent NaOH and 0.1 per cent NaCN.

Pregnant strip solution is accumulated in a surge tank prior to electrolytic recovery. Two electrolytic cells are operated in parallel at a combined flow rate of 7 gallons per minute. Each electrolytic cell has seven cathode baskets containing five pounds of steel wool each. Loaded cathodes are leached with  $H_2SO_4$  to remove the steel wool before the cathode sludge is placed in a mercury retort. Mercury is collected from a water cooled condenser and the retorted sludge is placed in a refining furnace.



Mercury occurs naturally in the ore body and is removed along with the gold and silver during leaching. This mercury is extracted by the use of a retort furnace prior to the final refining and pouring of the dore bars. Due to higher than expected mercury levels, a new forced air ventilation system has been installed, a larger retort furnace has been purchased, employee protection devices are being used, and employee health monitoring measures have been implemented.

The stripped carbon is passed through a regeneration kiln and an acid treatment section prior to being returned to the adsorption columns. New, make-up, carbon is added periodically as needed.

The refined dore bullion is cast into 1,000 ounce bars for delivery to Handy & Harman.

## MARKETING

Gold and silver dore production is currently being refined at Handy & Harman's (H & H) El Monte, California refinery under a contract which expires November 10, 1982.

The returnable refined gold and silver can be placed in Cyprus' "pool account" at H & H for subsequent sale, transferred to a third party, or sold directly to H & H. Suitable bars may be physically returned to Northumberland or delivered to Comex with the appropriate charges for bar pouring and physical delivery.

In the case of direct sale to H & H, payment is made once assays are agreed upon. The actual price quotations used are the London second fixing gold price and the H & H silver quotation. H & H also offers an advance payment option of pricing up to 95 per cent of mine weights of gold and silver beginning the second day after receipt of the material with the advance payment upon completion of pricing. The balance of payment is made following the agreement of assay contents. As of this date, agreements have been made for forward gold sales of 2,000 ounces from 1982 production and 13,000 ounces from 1983 production. This is less than one-half of the expected 1983 gold production.

Northumberland plans to solicit refining bids by major refineries in October to determine the most competitive terms and services for a new refining contract.

## HUMAN RESOURCES

Members of the work force at the Northumberland mine are employees of the Cyprus Mines Corporation (except for the mine manager who is an employee of Amoco Minerals Company) and are covered by a loan agreement between Cyprus Mines Corporation and Cyprus Northumberland Mining Company. Accordingly, Cyprus Northumberland Mining Company has no benefit plans in its own right. The rates of pay, remote pay allowances, vacations, holidays, and related practices appear to be competitive in the mining industry. The operation has been union free since start-up. A union vote occurred in the fall of 1981, but the Teamsters' organizing efforts were defeated by a vote in excess of three to one.

The Cyprus benefit plans, which are currently in effect, include a savings plan for salaried employees, a comprehensive medical plan for all employees, and short term and long term disability benefit plans. All employees are covered by non-contributory retirement plans which are believed to be representative of benefits in the industry in general.

Employment in each department follows:

<u>Department</u>	<u>Number of Employees</u>
Mine and Engineering	47
Maintenance	18
Crushing	10
Plant	15
Assay	8
Warehouse	4
Office and Administrative	<u>8</u>
Total	110

## OTHER CONSIDERATIONS

### Land Status

The Northumberland project controls of the following land:

	<u>Acres</u>
176 Unpatented Lode Mining Claims	3,490
2 Unpatented Placer Claims	26
216 Unpatented Millsites	<u>1,080</u>
Total Acres	4,596

An application for patent dated May 28, 1982, for nine of the lode claims (approximately 180 acres) is currently being processed by the Bureau of Land Management. Seventy-eight millsites (approximately 390 acres) will be applied for patent, pending the approval of the final survey notes by the BLM's Cadastral Engineer.

### Environment

Environmental permitting was completed prior to 1981 and included:

1. An approved plan of operation from the U.S. Forest Service. A reclamation bond of \$122,800 was submitted to the Forest Service.
2. Air Quality Permits--Nevada Division of Environmental Protection.
3. PSD Permit--EPA.
4. Water Quality--Zero Discharge Permit from the Nevada State Division of Environmental Protection.

### Litigation

There is no major litigation concerning Northumberland. Information on current litigation will be made available.

### Housing

The project site is very remote and there is only a limited infrastructure. Cyprus has established a housing policy which assists employees in the purchase of mobile homes. The policy includes assistance on a down-payment and assistance to assure the employee a

maximum interest rate of 10 per cent. Cyprus Northumberland also owns 23 living units to provide temporary living quarters while employees qualify for their own housing.

#### Utilities

All power is diesel generated on site. A set of generators supplies power for the plant area consisting of water wells, recovery plant, leach pads, offices and some housing. An additional set of generators supplies power for the crusher, mine shop, offices and water wells.

All water must be pumped from wells located at the mine and at the plant. Plant water is treated to reduce bicarbonate levels. No surface water is available.

## FINANCIAL SUMMARY

Since Northumberland did not begin full production until early to mid 1982, there is minimal historical data. Shown below are year-end 1981 and July 31, 1982, balance sheets for Northumberland.

Northumberland Mine Balance Sheet (\$Thousands)
---

	<u>December 31, 1981</u>	<u>July 31, 1982</u>
Current Assets		
Cash	--	12
Receivables	--	548
Inventories	3037	4086
Other Current Assets*	<u>3125</u>	<u>1392</u>
Net Working Capital	6162	6038
Plant, Property and Equipment	18075	17233
Other Assets	622	1466
Deferred Taxes	<u>(2035)</u>	<u>(2283)</u>
Total Invested Capital	22824	22454

\*Net of current liabilities.

GEOLOGY AND MINERALIZATION

The geology of the Toquima Range in the vicinity of the Northumberland Mine consists primarily of lower and middle Paleozoic carbonate rocks. These eastern assemblage rocks are exposed in a window in the Roberts Mountains thrust. The upper plate silicious rocks (western assemblage) which are of the same approximate age as the lower plate rocks are found in their closest proximity one mile east of the mine area. Tertiary rocks, primarily ash flow tuffs and shallow intrusive bodies, are locally found intruding or covering the Paleozoic sediments. The tuffs appear related to a volcanic eruptive event which occurred over 30 million years ago at the volcanic center of a caldera located four miles to the west of Northumberland. The Tertiary rhyolitic intrusives found in the mine area appear to be related to this event, but remain undated.

The gold mineralization is primarily located in Ordovician sediments on the northern margin of a granitic stock dated 150 million years old. The interior portion of the stock is a medium-grained granodiorite. Bordering the granodiorite is a felsic intrusive which may be a late phase of the granodiorite intrusive or, more likely, later intrusive occupying the same zone of structural weakness as the granodiorite. Numerous dikes and sills associated with the later intrusion, a tonalite (quartz porphyry), are found intruding the sediments in the area of the present mining operation. The altered portion of the tonalite has been dated by the United States Geological Survey at 85 million years. Both silver and gold mineralization are present within the tonalite as well as in the adjacent rocks.

Two distinct periods of mineralization have been recognized at Northumberland. The first period of mineralization is associated with the emplacement of quartz-silver veins as well as selective silicification of the sediments. Superimposed over the high grade silver veins and silicified zones is a later stage of disseminated gold mineralization found within a broader alteration zone. While much of the alteration associated with the emplacement of the silver mineralization is masked by the later gold-related alteration, the alteration zone containing silver appears to be directly related to the waning stages of the tonalite intrusive.

The alteration related to the gold mineralization at Northumberland is typical of the "Carlin Type Epizonal Alteration", and shows evidence of vertically controlling structures, as well as stratiform control along selective horizons in the sediments. One of the most prominent features of alteration is the outward mobilization of calcite or decarbonization followed by replacement with silica and pyrite in the sediments. Barite found in the higher grade portions of the Main orebody (generally near high angle structures) is believed to be closely related to the source structures channeling the mineralization. Locally, the limestones are dolomitic and this dolomitization

appears to be related to the gold mineralization. While the micron-sized gold particles of the deposit have yet to be studied by electron microscope techniques, it is believed that the gold is intimately associated with both the fine-grained pyrite and the iron oxide coated fractures in the jasperoid rocks.



GILT EDGE MINING PROPERTIES

MEMORANDUM

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CONFIDENTIAL

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This Memorandum has been prepared by Cyprus Mines Corporation (Cyprus). It is being delivered to a limited number of parties who it is believed may be interested in acquiring the Gilt Edge mining properties (Gilt Edge), located in South Dakota. The sole purpose of this Memorandum is to assist the recipient in deciding whether it wishes to proceed with an in-depth investigation of Gilt Edge. While the information herein is believed to be accurate, Cyprus expressly disclaims any and all liability for representations or warranties, express or implied contained in, or for omissions from, this Memorandum or any other written or oral communication transmitted or made available to a prospective purchaser.

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Cyprus Mines Corporation

September, 1982

Gilt Edge Project  
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## EXECUTIVE SUMMARY

The Gilt Edge Mining District, located about five miles southeast of Lead, South Dakota and the Homestake gold mine, has produced gold intermittently since the late 1800's. In 1975, Cyprus Mines entered into a joint venture agreement with Congdon and Carey (80 per cent Cyprus and 20 per cent Congdon and Carey). The primary objective of the agreement was the exploration and development of properties held under a lease and option to purchase agreement with Commonwealth Mining Company. The joint venture has continued to acquire property and currently holds two placer claims, 95 patented lode claims and 82 unpatented lode claims.

Exploration efforts since 1975 have developed extensive data on gold mineralization and distribution at Gilt Edge. A total of 214 shallow rotary drill holes and 47 diamond drill holes have been completed on the property. Exploration activity including drilling is currently under way.

Several studies have been made to define shallow open-pit mining reserves. Exploration efforts begun in 1980 and executed principally in 1981 and 1982 were designed to test for deeper, higher grade gold mineralization to be mined by underground methods. Both manual and computer techniques have provided indications of in-place (geologic) reserves in excess of 26.1 million tons averaging 0.043 ounces of gold per ton.

Several metallurgical studies have been done at Gilt Edge, and final reports are now being prepared. A cyanidation study involved leaching tests on agitated ore pulps, leaching of flotation concentrates and leaching of roasted concentrates. Agitated leaching yielded 75 to 80 per cent of the gold content, and leaching of flotation concentrates yielded a net of 75 per cent. Roasted concentrates gave significantly greater recovery yielding 97 per cent of the gold.

The other metallurgical work concentrated on examining Gilt Edge ores for their amenability to heap leaching. Oxidized ores from the shallow, open-pit reserves are heap leachable with recoveries averaging 70 per cent of the contained gold when the ore is crushed to 2 inches or less.

Total expenditures on the Gilt Edge Project are \$3.4 million since 1974, shared 80 per cent by Cyprus and 20 per cent by Congdon and Carey. Exploration costs peaked at \$1.1 million in 1981 and are expected to total \$0.6 million in 1982.



## INTRODUCTION

### Description

*Nature of Case 2*

The Gilt Edge Mining District, located about five miles southeast of Lead, South Dakota and the Homestake gold mine, has produced gold intermittently since the late 1800's. In 1975, Cyprus Mines entered into an 80 per cent Cyprus and 20 per cent Congdon and Carey joint venture agreement to explore and develop properties under a lease and option to purchase agreement with Commonwealth Mining Company.

The Gilt Edge project is located in Lawrence County, South Dakota (see Index Map opposite). The property may be reached by U.S. Highway 385 south from Lead, and then along a gravel road 4.5 miles toward the old town of Galena. The Gilt Edge property is located near Galena at the headwaters of Strawberry Creek.

### General History

The Gilt Edge project area comprises the bulk of the Gilt Edge mining district. The Gilt Edge property currently consists of four different parcels of land with different histories: the Commonwealth Mining Company property, the Northwestern Metals Company land, the Kosel claims (Magdalena Waggoner Estate), and claims staked by Cyprus (see Figure 1 overleaf).

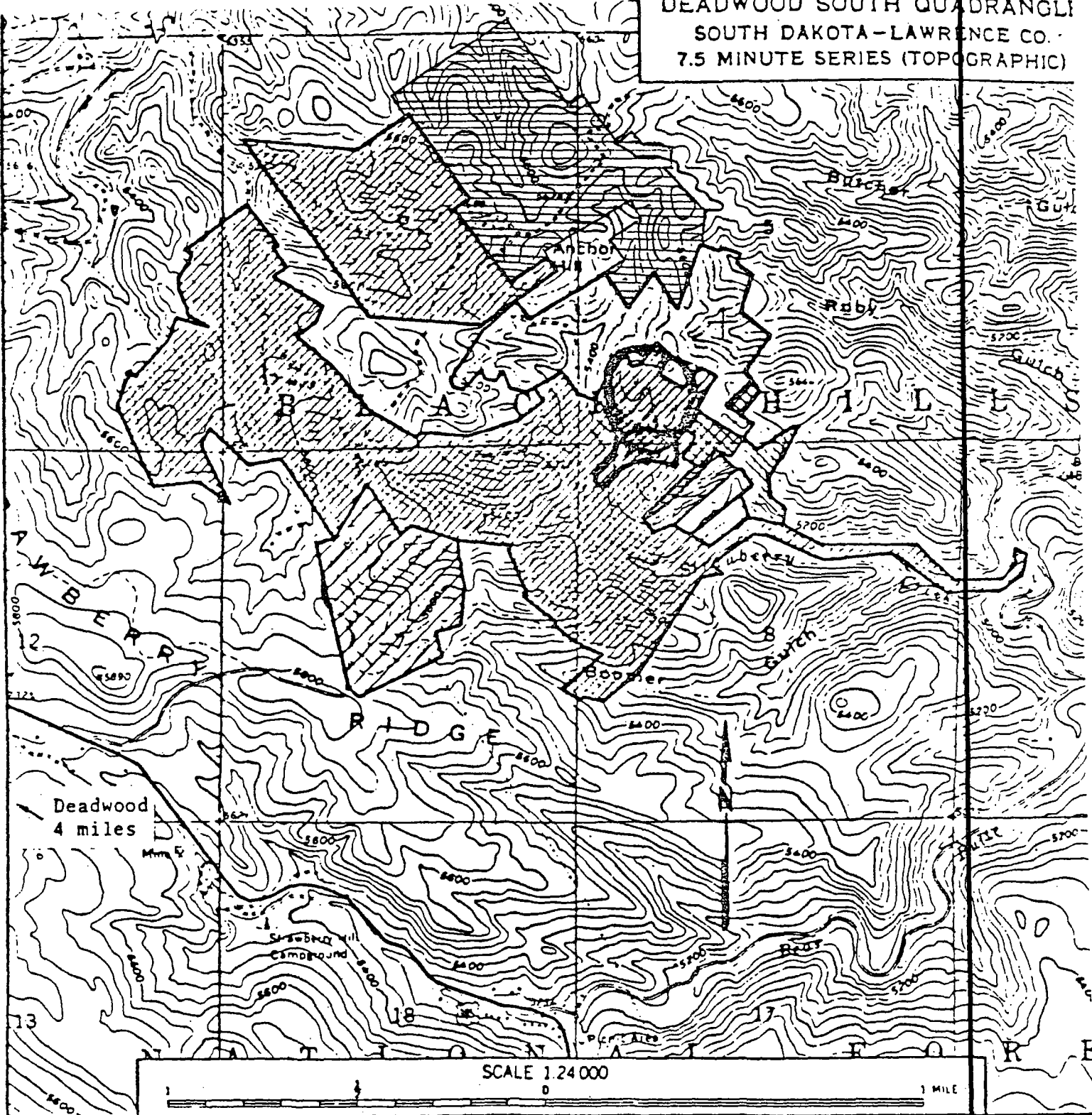
Most of the old Gilt Edge mines are located on the property owned by Commonwealth Mining Company. Commonwealth purchased its properties in the late 1940's but never operated any of them. Commonwealth holdings total 75 patented lode claims, one patented placer claim, and 17 unpatented lode claims.







The Northwestern Metals property consists of 16 claims of the once extensive Branch Mint Mining Company. Prior to 1912, the Branch Mint claim group was larger and more productive than Gilt Edge, with a large mill and a spur track connecting the mine to the main railroad line.




Four claims once held by the Kosel family include the portals of the Ora Bella (Rattlesnake Jack extension) and the Hoodoo workings, but no major production has been obtained from the area within the claim boundaries.

In 1967, a major portion of the project area was explored by the partnership of Congdon and Carey as a copper-molybdenum target. Eleven core holds totalling 9,960 feet were drilled, reaching a maximum depth of 1,500 feet. Discouraging results forced abandonment of the project in 1971.

DEADWOOD SOUTH QUADRANGLE  
SOUTH DAKOTA-LAWRENCE CO.  
7.5 MINUTE SERIES (TOPOGRAPHIC)



-  Commonwealth
-  Commonwealth Unpatented
-  Northwestern Metals
-  Kosel
-  Kosel 5/8 interest  
Commonwealth 3/8 interest
-  Kosel 1/4 interest only

-  CYPRUS - CONGDEN & CAREY
-  Area containing shallow gold reserves-surface mineable
-  Underground potential deposit

## Cyprus Program

★ Property Acquisition - In 1974, Congdon and Carey reacquired the Commonwealth Mining Company portion of the Gilt Edge property, and promoted it to Azcon Corporation (Consolidated Gold Fields), who referred the prospect to Cyprus Mines under the terms of an existing exploration agreement. The resulting joint venture between Cyprus and Congdon and Carey has been in effect since 1975 to develop the gold potential of Gilt Edge. Azcon participated in the joint venture during 1976 and 1977, but terminated their interest under the terms of another Cyprus-Azcon business arrangement.

Sixteen claims and fractions owned by the Northwestern Metals Company were acquired in 1976. Several claims owned by the estate of Magdalena Waggoner (Kosel Claims) were optioned in 1978, and have been wholly owned by the joint venture partners since 1981. During mid-1982, nine lode claims or fractions were staked by Cyprus to help fill in gaps within the claim block, and to extend control in areas believed favorable for additional mineralization.

Shallow Exploration - From 1975 to 1980, Cyprus, as operator for the joint venture, explored shallow gold mineralization at Gilt Edge, anticipating development of an open-pit, heap-leach operation. During this period, some 214 shallow rotary holes totalling 52,050 feet were drilled on a roughly 100- to 150-foot grid. Maximum hole depth was 350 feet. Sixteen core holes totalling 9,366 feet and varying in depth from 355 to 1,150 feet were drilled to aid delineation of the shallow gold deposit. This exploration program has defined a significant low-grade gold deposit.

Deep Exploration - The 1981 drilling program was designed to search for deeper, higher-grade gold mineralization that could be developed by underground mining. Results of 18 core holes totalling 19,740 feet indicate that substantial tonnages of previously undefined gold mineralization exist in at least one of three separate target areas.

## GEOLOGY

The regional geologic setting as well as the geology of the Gilt Edge project area are described in Attachment 1.

Shallow Gold Mineralization - Exploration efforts at Gilt Edge since 1975 have developed extensive data on the distribution of shallow gold mineralization. Gold was emplaced with one or more of the several generations of pyrite and is most abundant in more intensely pyritized and silicified shear zones. Oxidation assisted the distribution of very fine grained gold throughout a broad area where it is now contained in residual clay and silica-rich rock.

The central stock gold occurs in two distinct zones about 900 feet apart and is contained wholly in Tertiary porphyry rocks. In the western Dakota Maid area, gold occurs with varying amounts of copper and silver associated with silica and pyrite alteration. This silica-pyrite zone is 200 feet wide by 600 feet long and trends roughly north-south. Significant gold mineralization occurs to 900 feet depth but assays from deeper angle drilling showed little potential for much additional tonnage.

The second gold zone of the central stock area is the Rattlesnake-Sunday zone. Here, gold occurs in relatively unsilicified, pyrite-rich breccia zones and fractures adjacent to a system of steeply dipping rhyolite dikes trending N 40°-45°E. Much of this brecciated, pyrite-rich ore is oxidized and leaches readily, as defined by metallurgical studies. The dike itself is siliceous and leaches poorly. A zone of uneconomic copper enrichment is in mine workings about 200 feet deep.

Deeper Gold Mineralization - Deeper, higher grade gold mineralization potential was confirmed at Gilt Edge by the 1981 core drilling effort. A bulk gold deposit with grades in excess of 0.1 ounce gold per ton appears to have been intersected by drilling in the "cabin site" near the northwestern margin of the southern sanidine rhyolite porphyry stock. Gold mineralization occurs with pyrite and silica alteration possibly related to fine-grained, late trachyte porphyry dikes. Some high grade gold is also associated with open-void crackle breccia that has been filled with coarse pyrite, purple fluorite and hematite.

Target Concept and Exploration Potential - Two types of gold deposits warrant further exploration at Gilt Edge. Shallow low-grade gold, believed to form by oxidation of auriferous pyrite has been defined in the central sanidine rhyolite stock area. Disseminated gold with grades in excess of 0.1 ounce per ton have been recently discovered in the deeper portions of the intrusive complex.

Shallow oxide ore may be found by rotary drilling both north and south of the known Dakota Maid-Sunday reserves, where surface geochemical



gold anomalies occur near the margins of the northern and southern sanidine rhyolite stocks. These areas have little rock outcrop, and significant tonnages may exist beneath shallow soil cover. Mineable reserves of 5 to 10 million tons averaging 0.05 ounces per ton may be located in these areas.

Deeper, bulk gold deposits with grades in excess of 0.1 ounce per ton are related to highly altered trachytic breccias. A deposit of this type was inferred from the results of the 1981 drilling program in the southern stock-cabin area, and the 1982 drilling thus far completed confirms the significance of the discovery. Surface mapping and detailed core logging suggest that the area near the southern stock known to contain similar rock units is capable of containing a gold deposit in excess of 10 million tons averaging better than 0.1 ounce per ton. Additional examination of the poorly known northern stock, and reevaluation of data from the central stock area in terms of this new discovery may suggest similar geologic situations in these areas as well.

### IN-PLACE (GEOLOGIC) RESERVES

Several independent studies of the gold reserves at Gilt Edge have been undertaken. The most recent study, incorporating the 1981 drilling program, was done by Whitney and Whitney, Inc. of Reno, Nevada. The results of their study show in-place (geologic) gold reserves using a 0.02 ounce per ton cutoff of 26.1 million tons with an average grade of 0.043 ounces per ton gold for a total of 1.1 million ounces of gold. A cutoff of 0.025 ounces per ton yields reserves of 18.8 million tons with an average grade of 0.051 ounces per ton. The reserves can be divided into two categories:

1. The shallow areas which are above 5,200 feet in elevation.
2. The deep area which is below 5,200 feet.

At the 0.02 ounce per ton cutoff grade, the reserves for the shallow area are 14.4 million tons at 0.039 ounces per ton and for the deep area are 11.7 million tons at 0.048 ounces per ton.

## METALLURGY

Extensive data have been acquired relative to the metallurgical character and processing of Gilt Edge gold mineralization. Early studies identified three principal categories of mineralized rock: oxide, sulphide, and mixed-oxide sulphide. Cyanide leaching experiments indicate that gold recoveries ranged from 90 per cent for oxide material to 65 per cent for sulphide material. A series of experiments designed to evaluate the heap leach potential of Gilt Edge ores progressed in scale from bottle tests to bucket-leach tests to laboratory column tests. All results suggested oxide zone gold recoveries on the order of 70 per cent.

A 1,700-ton pilot heap-leach facility was constructed to demonstrate the safety and reclamation of such projects to state authorities and to provide preliminary data on large-scale gold recovery. Gold recovery during the test was approximately 48 per cent, even though the rock had not been crushed prior to heap construction. Additional experimentation with large-scale leaching of 25-ton bulk samples in 40-foot-high column tests proved both that the percolation characteristics of Gilt Edge ore are acceptable for the construction of tall heaps and that gold recoveries of some 75 per cent can be achieved.

Following the heap-leach experiments, a series of studies are now under way to determine the behavior of Gilt Edge material under conventional (agitation) milling conditions. Results of bottle-roll tests indicate:

1. Gold recovery as high as 82 per cent and averaging 76 per cent.
2. Silver recovery is 3.5 times that expected under heap-leach conditions.
3. Interference with gold recovery by cyanide-soluble copper is significant in minor portions of the shallow deposit, but will not affect overall processing of ore by either conventional milling or heap leaching.

Flotation studies have produced high-grade sulphide concentrates, and tests are continuing to determine best recovery procedures for these concentrates.

## OTHER CONSIDERATIONS

### Claims

The project area is located within the Black Hills National Forest. Most of the immediate area, however, consists of patented mining claims, inasmuch as mineral development has a long history in the vicinity. Some public domain land exists near the margins of the old mining district. Ownership of patented claims outside the joint venture property appears fragmented.

The joint venture of Cyprus and Congdon & Carey currently has an interest in two placer claims, 95 patented lode claims, and 32 unpatented lode claims.

### Infrastructure

The project area is almost ideally located with respect to support facilities for possible development. As stated earlier, Gilt Edge is situated near the Homestake Mine, an important underground gold producer for over 100 years. The mining communities of Lead and Deadwood and the surrounding rural area contain an existing pool of skilled miners and craftsmen. Motel, restaurant, and general service and supply facilities also exist in Deadwood and Lead. The Burlington Northern Railroad passes within four miles of the property and a paved federal highway passes within a mile and one-half. Commercial airline transportation is available in Rapid City, 45 miles by highway. Electric power has already been installed on the property for operation of the heap-leach facility.

### Costs

Exploration costs at Gilt Edge appear to be typical of those expected in more accessible portions of the western United States. The project area is well located with respect to supplies and contractors, and access to the property is good. Operating costs for a mining operation might be lower than those expected in many areas because of the project's location adjacent to the operating Homestake Mine. Both a skilled labor pool and suppliers are already established in the region.

### Political Factors

Despite the 100-year operation of the Homestake Mine in the state, South Dakota is still in the process of establishing new regulations for the mining industry. State agencies recognize the complexity of

the mining business and rely heavily on industry people for guidance. The pilot heap leach operation at Gilt Edge was the first in South Dakota and it provided state agencies with important data for regulating this type of operation. The Cyprus heap Teach facility operated in 1980 and 1981, and was well received by regulators.

South Dakota is currently studying a number of changes in its general mining status. An evaluation of proposed revisions as they existed in late 1981 indicates that several aspects of the proposed changes would benefit development of Gilt Edge. Two of these changes would prohibit the state from requiring reclamation of existing surface disturbances as a condition for approving any permit for a new or existing mining operation, and would centralize all permitting at the state level.

#### Environmental Considerations

There are no extraordinary environmental considerations believed to affect development at Gilt Edge. Location of the project area in a previously disturbed region may provide a degree of protection from unreasonable environmental demands.

The cyanide heap-leach operation on the property was at one point a cause of some concern by state regulatory agencies. However, regulatory guidelines were defined without undue difficulty and the pilot test proceeded to completion. Monitoring of cyanide levels in the vicinity revealed no unexpected migration of cyanide in the environment, and the heap is now being neutralized.

## JOINT VENTURE AND OTHER AGREEMENTS

A number of agreements are relevant to the Gilt Edge project. Cyprus acquired its interest in the various properties comprising the project through a joint venture agreement dated January 1, 1975, with Congdon and Carey, Ltd. 5, a partnership of Thomas E. Congdon and William J. Carey. Briefly stated, the provisions of the joint venture agreement are that all expenses and income arising from the operations conducted are divided 80 per cent to Cyprus and 20 per cent to Congdon and Carey. Exploration budgets shall not exceed \$250,000 annually except by consent of the parties, and approved budgets shall not be exceeded by more than 10 per cent without prior approval. There are an exceptions to the 80:20 division related to royalties from the Commonwealth and Northwestern properties which are discussed at greater length in Attachment 2. Cyprus is designated as Operator in the agreement. The joint venture terms apply to any additional properties acquired by either party within a two-mile area of influence surrounding the initial properties involved. For U.S. tax purposes, the joint venture has elected out of the partnership provisions of the Internal Revenue Code.

There are several lease-purchase arrangements between the various landowners of the subject properties and Congdon and Carey. The requisite 80 per cent interest in these agreements was assigned to Cyprus by Congdon and Carey under the terms of the joint venture agreement. Interest in a third property was acquired by outright purchase by the joint venture partners. Terms of these property agreements are also summarized in Attachment 2.

## FINANCIAL SUMMARY

A summary of exploration expenditures since 1974 is shown below:

<u>Year</u>	<u>Total Expenditures-\$M (a)</u>
1974	14
1975	133
1976	195
1977	89
1978	92
1979	306
1980	1053
1981	1114
1982 (First 7 Months)	373
Total	<u>3369</u>

(a) Total expenditures at Gilt Edge includes both Cyprus' and Joint Venture Partners' share of expenditures.

## Regional Geology

The Gilt Edge project area is located in the northern part of the Black Hills, a Laramide domal uplift that exposes Precambrian metamorphic and plutonic rocks rimmed by tilted Paleozoic and Mesozoic sedimentary rocks. Superimposed as a northwest-trending belt upon the northern Black Hills is a Cenozoic igneous province 12 miles wide by 75 miles long. These silicic intrusives contain precious metals at Gilt Edge and in other areas along the belt. The Gilt Edge area is one of thirteen recognized intrusive centers within this province and all appear to have been emplaced at fairly shallow depths. Compositionally, they are alkalic with strongly undersaturated varieties in the western three-fourths of the belt and silica-saturated rocks in the eastern quarter, which includes Gilt Edge.

## Geology of the Project Area

The project area is located in the western part of the Gilt Edge-Galena intrusive complex. Detailed geologic mapping shows Precambrian quartzites and schists unconformably overlain by Cambrian flat-lying to gently dipping Deadwood Formation sandstones and shales. Younger Paleozoic sedimentary rocks are largely eroded. This sequence has been intruded by a complex of Tertiary stocks, sills, and other bodies that include rhyolite, trachyte, diorite and more mafic rock types.

The earliest Tertiary intrusion is a 200-foot-thick sill of hornblende diorite porphyry. Later is a sequence of trachytic to rhyolitic porphyritic intrusions. The earliest of these occurs as elongate masses and dikes that parallel a northeast structural grain. Detailed logging of drill holes indicates that a highly altered trachytic rock found only as breccia in deep drill holes seems to contain the plus-0.1 ounce gold values.

Three small stocks of sanidine rhyolite porphyry intrude the earlier porphyries. The central stock is roughly circular and 1,000 feet in diameter; the Dakota Maid and Sunday workings are located around its western and southeastern contacts, respectively. The southern stock is elongate east-west, measuring 800 feet by 1,400 feet. It is centered some 1,400 feet south of the Dakota Maid pit. Very little is known of the northern body because mapping was terminated in this area by snowfall in November, 1981. Alteration and gold mineralization are associated with all three stocks.

Breccias are abundant at Gilt Edge, and intrusion breccias predominate. Rhyolitic and trachytic intrusions have incorporated locally significant volumes of preexisting rock types into their mass. Other breccias have formed as crackle breccias that have been filled by secondary minerals, commonly pyrite, purple fluorite and hematite. Crackle breccias probably were created by physical emplacement of one or more



of the hypabyssal intrusive units that may or may not have been a source of gold mineralization. Surface sampling shows anomalous base and precious metal mineralization in some breccia zones.

One result of the detailed core-logging program started in 1982 is the recognition of a rock type comprised of highly altered and silicified quartz-free porphyry embedded in a matrix of fine-grained and altered igneous material. Clasts and matrix are not easily distinguished, and the entire rock has a jumbled, igneo-fragmental appearance. The rock is pyritized and locally intensely fluoritized in addition to the intense silicification and quartz veining. This rock unit has been identified only in the southern stock-cabin area, and seems to carry high gold values somewhat consistently. Partial assay results have identified 80 feet of 0.116 ounce per ton material in the first 1982 drill hole.

Basal Deadwood Formation rocks typically contain anomalous values in the Gilt Edge area and throughout the region. Precambrian metamorphic rocks typically are not anomalous at Gilt Edge except near the old Oro Fino Mine.

Attachment 2

Commonwealth Mining Co. (Lease-Purchase)

Acreage: 1940 acres

Purchase Price: \$2,500,000-May be purchased at any time.

Term of Lease: 15 years from October 16, 1974 or as long as commercial production continues.

*Must be in  
production by  
1989*

Payment Schedule:

A lump sum payment on the Commonwealth property was made on October 16, 1974. Quarterly advance royalty payments began on October 16, 1975. Commonwealth has been paid \$83,000 through July, 1982, of which \$66,400 was paid by Cyprus and \$16,600 by Congdon and Carey. The payment schedule through 1985 is as follows:

	<u>Total</u>	<u>Cyprus Share</u>
1983	\$20,000	\$16,000
1984	\$20,000	\$16,000
1985	\$20,000	\$16,000

Taxes are paid annually, and total approximately \$3,000, of which some \$2,400 will be payable by Cyprus.

Work Commitments: \$300,000, previously fulfilled.

Royalty to Commonwealth:

- 8 per cent net smelter return on first \$2 million produced.
- 6 per cent net smelter return on second \$2 million produced.
- 4 per cent net smelter return on third \$2 million produced.
- 2 per cent net smelter return beyond \$6 million produced.

These figures refer only to production from Commonwealth property. The net smelter return will be divided between Cyprus and Congdon and Carey on an 80 per cent - 20 per cent basis, and royalty payments to landowners will also be divided on an 80 per cent - 20 per cent basis as an expense. The only exception to the 80 per cent - 20 per cent division of expenses and income is in the event either party's interest becomes diluted to five per cent or less, they will still receive two per cent of the net smelter return, if and when the Commonwealth property is bought out. Both advance and

(AP) ~~production royalties are credited against the purchase price. Advance royalties are credited against production royalties.~~

Assignments:

Any of the participants may assign their interest.

Northwestern Metals Co. (Lease-Purchase)

Acreage: 119.2 acres

Purchase Price: \$1,250,000-May be purchased at any time.

Term of Lease: 15 years from September 1, 1976, or as long as commercial production continues.

1901

Payment Schedule:

Payments on the Northwestern property began December 1, 1976. Escalating quarterly payments of advance royalty have continued from that date. Northwestern has been paid \$51,000 through September, 1982, of which \$40,800 was paid by Cyprus and \$10,200 was paid by Congdon and Carey. The payment schedule through 1984 is as follows:

	<u>Total</u>	<u>Cyprus Share</u>
1983	\$13,000	\$10,400
1984	\$14,000	\$11,200

Taxes are paid annually and total approximately \$500, of which some \$400 will be payable by Cyprus.

Work Commitments: \$300,000, previously fulfilled.

Royalty to Northwestern:

8 per cent net smelter return on first \$1 million produced.  
6 per cent net smelter return on second \$1 million produced.  
4 per cent net smelter return on third \$1 million produced.  
2 per cent net smelter return beyond \$3 million produced.

These figures refer only to production from Northwestern Metals property. Net smelter return is to be divided between Cyprus and Congdon and Carey on an 80 per cent - 20 per cent basis, and royalty payments to landowners will be divided 80 per cent - 20 per cent as an expense. If Congdon and Carey's interest becomes diluted to five per cent or less, they will still receive two per cent of the net smelter return. Both advance royalties and production royalties are credited against the purchase price. Advance royalty is credited against production royalty.

MB

Assignments:

Any of the participants may assign their interest.

Kosel Claims (Magdalena Waggoner Estate) (Contract for Deed)

Acreage: 21.3 acres

Purchase Price: \$75,000 (Paid)

Payment Schedule:

Payments on the Kosel property began on August 11, 1978, with a second payment on September 1, 1978. Annual payments continued until September 1, 1981, at which time the purchase price had been paid in full and title to the property passed to the joint venture partners. Cyprus has paid \$60,000 and Congdon and Carey has paid \$15,000. Taxes on the Kosel property are approximately \$200 per year, of which \$160 will be payable by Cyprus.

Work Commitment: There is no work commitment on the property.

Royalty:

There are no royalty provisions on the property, inasmuch as it is owned outright by the joint venture partners.

Assignment:

No party to the Contract for Deed could assign their interest in the Contract. This provision is no longer relevant since the Contract has been fulfilled and title belongs to the joint venture partners.

Partial Interest:

It should be noted that the Kosel agreement conveyed only partial interest in three of the four claims comprising the subject property. Ownership of the four claims is as follows:

<u>Claim</u>	<u>Cyprus and Congdon and Carey</u>	<u>Remainder</u>
Hoodoo Gulch Placer	100%	--
Waggoner Lode	5/8	3/8 Commonwealth Mining
Ora Bella Lode	5/8	3/8 Commonwealth Mining
Crown Point Lode	1/4	3/4 Crown Point Mining

The balance of the three-eighths interest in the Waggoner and Ora Bella claims is controlled by the joint venture under the lease-purchase agreement with Commonwealth Mining Company.

JEN Claims (Unpatented)

During May, 1982, seven lode claims (JEN 1-7) were located on open Forest Service land in the vicinity of Anchor Hill, an area shown to be of interest by mapping in 1981. Two additional claims (JEN 9, 10) were located to cover otherwise open fractional areas within the main claim block. A total of \$900 annual assessment work is necessary to maintain these claims. The new claims are contiguous with the rest of the Gilt Edge property.

*Terminated*

A-1270

Cyprus Mines Corporation  
Gilt Edge Property  
Lawrence County, South Dakota

*Spend's*

No. 503

HASTINGS, MN

LOS ANGELES-CHICAGO-LOGAN, ILL.  
MCCREGG, TILLOUGH, PIONEER, CALIF.  
U.S.A.



File # A-1270

CONFIDENTIALITY AGREEMENT SUMMARY

COMPANY Cyprus Mines Corporation  
COUNTY Lawrence  
STATE South Dakota  
PROSPECT NAME Gilt Edge  
EFFECTIVE DATE September 13, 1982  
TERM 3 years (until September 13, 1985)

AREA OF INTEREST

No Map

Township 4 North - Range 3 East

Section 1: All  
Section 12: All  
Section 13: N 1/2

Township 5 North - Range 3 East

Section 36: All

Township 4 North - Range 4 East

Section 4: W 1/2  
Section 5: All  
Section 6: All  
Section 7: All  
Section 8: All  
Section 9: W 1/2  
Section 16: NW 1/4  
Section 17: N 1/2  
Section 18: N 1/2

Township 5 North - Range 4 East

Section 31: All  
Section 32: All

December 7, 1984  
Date Prepared

Sandy Hetsko  
Landman, Agent



A-1270

**Cyprus Mines Corporation**

7000 South Yosemite Street  
P.O. Box 3299  
Englewood, Colorado 80155  
303-740-5200

September 1, 1982

Gold Fields Mining Corporation  
200 Union Boulevard - Suite 500  
Lakewood, Colorado 80228

CONFIDENTIALITY AGREEMENT

Dear Sirs:

In connection with your possible interest in purchasing the Gilt Edge Property located in Lawrence County, South Dakota, ("Gilt Edge") we are furnishing you with certain information which includes information which is either non-public, confidential or proprietary in nature. Such information, in whole or in part, together with analyses, compilations, studies, or other documents prepared by you, your agents or employees, which contain or otherwise reflect such information and your review of, or interest in Gilt Edge, is hereinafter referred to as "the Information." In consideration of Cyprus Mines Corporation ("Cyprus") furnishing you with the Information, you agree that:

1. The Information will be kept confidential and shall not, without prior written consent of Cyprus, be disclosed by you, your agents or employees, in any manner whatsoever, in whole or in part, and shall not be used by you, your agents or employees, other than in connection with the transaction described above. Moreover, you agree to transmit the Information only to your agents and employees who need to know the Information for the purpose of the confidential use of the Information and who shall agree in writing to be bound by the terms and conditions of this agreement. In any event, you shall be responsible for any breach of this agreement by your agents or employees.
2. You shall keep a record of the location of the Information. The Information, except for that portion of the Information which consists of

analyses, compilations, studies or other documents prepared by you, your agents or employees, will be returned to Cyprus immediately upon Cyprus' request. That portion of the Information which consists of analyses, compilations, studies or other documents prepared by you, your agents or employees, will be held by you and kept confidential and subject to the terms of this agreement, or destroyed.

3. In the event that you or anyone to whom you transmit the Information pursuant to this agreement become legally compelled to disclose any of the Information, you will provide Cyprus with prompt notice so that Cyprus may seek a protective order or other appropriate remedy and/or waive compliance with the provisions of this agreement. In the event that such protective order or other remedy is not obtained, or that Cyprus waives compliance with the provisions of this agreement, you will furnish only that portion of the Information which is legally required and will exercise your best efforts to obtain a protective order or other reliable assurance that confidential treatment will be accorded the Information.
4. You agree not to acquire any real property interest or mining rights within the Area of Interest for a period of three (3) years from the date of your acceptance of this Agreement. The Area of Interest is hereby defined as that property situate in Lawrence County, South Dakota more particularly described as:

Township 4 North, Range 3 East

Section 1: all  
12: all  
13: N $\frac{1}{2}$

Township 5 North, Range 3 East

Section 36: all

Township 4 North, Range 4 East

Section 4: W $\frac{1}{2}$   
5: all  
6: all  
7: all  
8: all  
9: W $\frac{1}{2}$   
16: NW $\frac{1}{4}$   
17: N $\frac{1}{2}$   
18: N $\frac{1}{2}$


Township 5 North, Range 4 East

Section 31: all  
32: all

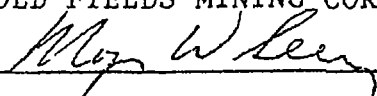
5. Nothing herein shall be construed as creating a client-broker or similar relationship between Cyprus Mines Corporation and you and no broker's, sales or finder's fee shall be payable to you by Cyprus.
6. Cyprus makes no warranties, express or implied, concerning the validity, accuracy or completeness of the Information.

If you agree to the above terms, please countersign both copies of this letter and return one to me.

Very truly yours,

  
Ralph E. Anderson  
Vice President, Administration

Accepted this 13th day of September, 1982.  
GOLD FIELDS MINING CORPORATION

  
By: MAJOR W. SEERY  
Administrative Director of  
North American Exploration  
Title

A-1270

GOLD FIELDS MINING CORPORATION

INTERNAL MEMORANDUM

DATE: December 10, 1984

TO: SEE DISTRIBUTION

FROM: Sandy Hetsko

SUBJECT: Confidentiality Agreement Summaries

Attached are copies of Confidentiality Agreement Summaries for the agreements which are still active. The areas which we are not allowed to enter, until the term has expired, are shown on these summaries. As we receive new agreements the summaries will be forwarded to you. Should you have any questions, please advise.

*Sandy*

DISTRIBUTION: Jim DeLong  
Steve Flechner  
Janet Graham  
Frances Hartogh  
Collon Kennedy  
Don Kohls  
Bill Lindqvist  
Rick Russell

cc: Eileen Green

GOLD FIELDS MINING CORPORATION

INTERNAL MEMORANDUM

DATE: September 14, 1982

TO: Collon C. Kennedy  
Land Department

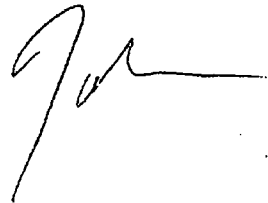
FROM: John Fitz-Gerald

SUBJECT: Amoco - Cyprus Northumberland Mine and Gilt Edge  
Property

Please note that in compliance with items 4. of the enclosed Confidentiality Agreements between Cyprus Mines Corporation and Gold Fields Mining Corporation dated as of September 1, 1982, Gold Fields has agreed not to acquire any real property interest or mining rights within three (3) years from the date of acceptance of this provision by Gold Fields (9/13/82), in approximately 20 sq. miles in Nye County, Nevada and approximately 12 sq. miles located in Lawrence County, South Dakota. The areas are specifically described in the attachments.

If you should have any questions or comments on the above, please feel free to discuss them with me.

JJF-G/gh  
Enclosures



## **Terri Faye**

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**From:** "Sorokacs, Carol" <CSorokac@bccz.com>  
**To:** <ems@frii.com>; <tgfaye@comcast.net>  
**Sent:** Thursday, August 06, 2009 2:34 PM  
**Attach:** 1983 GFMC Assay Reports SD.pdf; File Label.pdf  
**Subject:** Gilt Edge Mine [Box 31023]

Carol A. Sorokacs, Paralegal  
Babst Calland Clements & Zomnir, P.C.  
Two Gateway Center  
Pittsburgh, PA 15222  
Direct: 412/394-5440  
Fax: 412/394-6576  
[www.bccz.com](http://www.bccz.com)

No virus found in this incoming message.

Checked by AVG - [www.avg.com](http://www.avg.com)

Version: 8.5.392 / Virus Database: 270.13.45/2285 - Release Date: 08/06/09 05:57:00

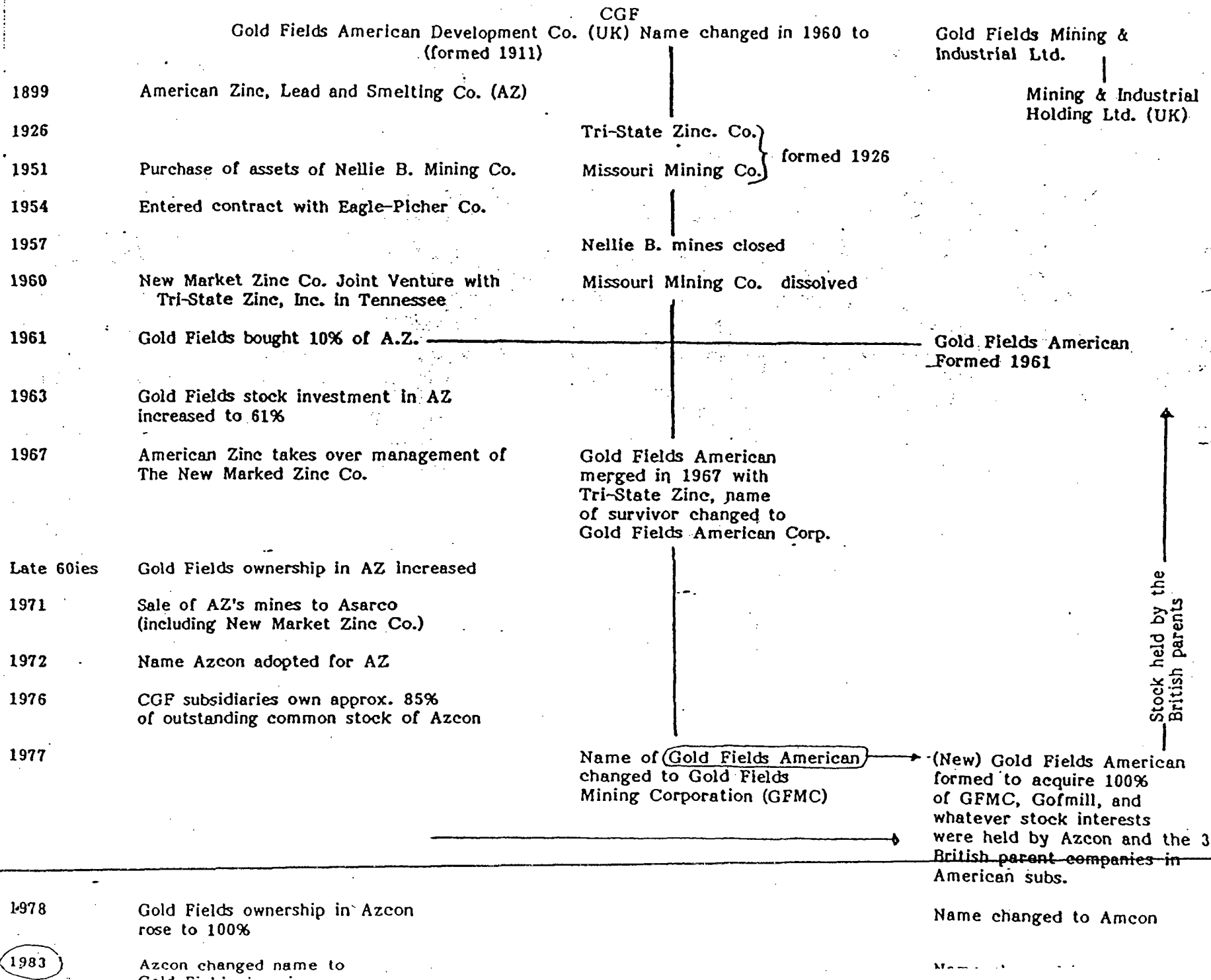
8.340-011

ASSAY REPORTS  
GFMC ASSAY LAB

SOUTH DAKOTA RECONNAISSANCE



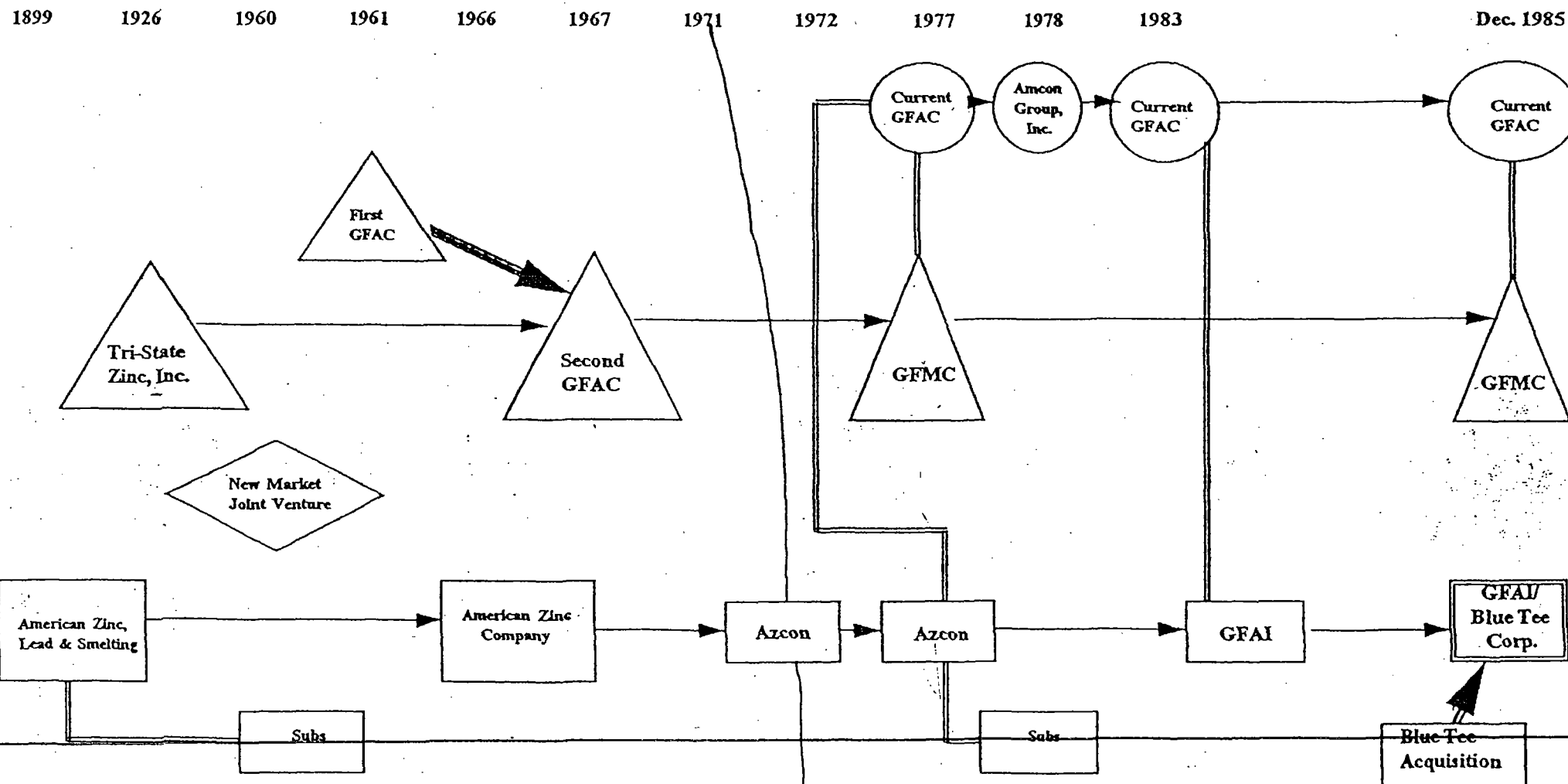
November 1, '86 - [REDACTED]



42-14 A (13)  
**COPY**

COPY

## GOLD FIELDS: RELEVANT CORPORATE ENTITIES THROUGH TIME



**AMERICAN ZINC, LEAD AND SMELTING COMPANY  
AMERICAN ZINC COMPANY ("AZn")**

COMPANY NAME	STATE	SUBSIDIARY OF	DESCRIPTION OF OPERATIONS	FACILITIES SITE	REFERENCE
<p>On May 21, 1963 Consolidated Gold Fields PLC ("CGF") acquired 61% of the outstanding stock in American Zinc, Lead And Smelting Company.</p> <p>In November, 1966 name changed to American Zinc Company.</p> <p>In November, 1972 name changed to AZCON Corporation.</p>	<p>St. Louis, MO Corporate Office: Portland, ME</p>	CGF	<p>Subsidiaries and Affiliated Companies:</p> <p>American Zinc Co. of Illinois 100%  American Zinc Oxide Co. 100%  American Zinc Co. of Tenn. 100%  American Limestone Co. 100%  American Zinc Co. of Okla. 100%  American Zinc Sales Co. 100%  American Zinc Co. of Ark. 100%  Aravaipa Leasing Co. 22.50%  Minerals Beneficiation Inc. 46.09%  Watauga Stone Co. 50%  Wisconsin Zinc Co. 86.62%  Equitable Development Co. 19.84%  Mt. Wheeler Mines, Inc. 22.15%  Uranium Reduction Co. 9.81%</p>	<p>Joint Ventures:  Quick Seven Zinc-Lead Mines 50%  M.I.A. Mines Co. 50%  Boss-Bixby 50%  Piquette Mining &amp; Milling Co. 75%  White Pine Stone Co. 50%</p>	Various Annual Reports
American-Peru Mining Company	NM	AZn	<p>Underground zinc mine and mill, acquired in 1960 as a joint venture. In 1959, acquisition of an undivided interest up to 50% in Peru Mining Company's properties located in New Mexico. Operated as JV through 1962; operated thru AZn solely since 1964. Property closed down in 1967. Mill was sold in the late 1970's.</p>	<p>Hanover and Deming, NM. Grant and Luna Counties, NM  Silver City, NM (1961)  Kearney Mine</p>	<p>1960-61 Annual Reports  American Zinc, Lead &amp; Smelting Co. and Peru Mining Co.  Hanover, NM Report.</p>
Caney Kansas Smelter*	KS	AZn	<p>One of two smelters (Dearing Smelter) in the Tri-State area which together produced 30,000 tons a year from January 1907 to end of November 1910.</p>	Kansas	<p>A History of the American Zinc Company, By James D. Norris, 1968.</p>

\* Denotes sites subject to environmental claims that are being handled by Beazer.